

2009 Minerals Yearbook

BULGARIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF BULGARIA

By Mark Brininstool

Bulgaria's mineral industry included mine output of metal ores, mineral fuels (mainly coal), and a variety of industrial minerals. Additionally, the metallurgical sector smelted and refined copper, lead, silver, steel, and zinc. On a world scale, however, Bulgaria's mineral industry was small and mainly of regional importance. Bulgaria had the potential to become a relatively important natural gas transit country because the planned South Stream and Nabucco pipelines were to pass through the country.

Minerals in the National Economy

In 2009, Bulgaria's gross domestic product (GDP) decreased by about 5% compared with the country's GDP in 2008, and the total value of industrial production decreased by about 8% and accounted for about 17% of the total GDP. In 2007 (the latest year for which data were available), mining and quarrying activities made up 4.4% of the value of industrial production. In 2008 (the latest year for which data were available), about 29,600 people were employed in mining and quarrying (National Statistical Institute of the Republic of Bulgaria, 2008, p. 114; 2010a, b).

Production

Refined copper production increased by 55% compared with that of 2008, and zinc mine output increased by 20%. Crude steel production declined by 45% and refined zinc production decreased by 14%. No pig iron was produced in 2009. Production of most industrial minerals was estimated to have decreased significantly in 2009 owing to difficult economic conditions and decreased construction activities, which affected demand for industrial minerals, such as cement (cement consumption decreased by 37% compared with consumption in 2008). Natural gas production decreased by 95% because production stopped in January (Italcementi Group, 2010a, p. 50).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Copper.—In 2008, Norddeutsche Affinerie AG of Germany merged with the Cumerio Group (the owner of Bulgaria's sole copper smelter and refinery at Pirdop), and on April 1, 2009, the company changed its name to Aurubis AG and the name of the Cumerio Med S.A. copper refinery at Pirdop to Aurubis Bulgaria AD. Refined copper production at Pirdop increased significantly owing to a new tankhouse that was completed in

2008. The tankhouse reached its original designed capacity of 180,000 metric tons per year (t/yr) in October 2008, but production capacity increased to 200,000 t/yr by the end of 2008 owing to improvements in the production process (Aurubis AG, 2009a, p. 66; b).

After it obtained its final construction permits, Dundee Precious Metals Inc. of Canada began construction to expand its mine and mill at Chelopech to increase production capacity to about 150,000 t/yr of copper concentrate and 140,000 troy ounces per year of gold in concentrate by 2012. All Chelopech Mine's copper concentrate was to be supplied to Dundee's Tsumeb smelter in Namibia, but the company also had plans to build a metal processing plant to produce copper cathodes and gold doré in Chelopech. The Bulgarian Ministry of Environment and Water (MoEW) issued Dundee the necessary environmental permits for the project in September, but in November, the Bulgarian Supreme Administrative Court rejected these permits and ruled that the project should undergo another review by the MoEW (Dundee Precious Metals Inc., 2010, p. 3, 5, 28).

Gold.—In 2009, International Resource Holdings Ltd. of Australia acquired Clean Global Energy Pty Ltd. of Australia and renamed the merged companies Clean Global Energy Ltd. In October. Euromax Resources Ltd. of Canada purchased the two gold exploration projects in Bulgaria owned by Clean Global Energy Ltd.'s subsidiary, Thrace Resources EOOD. The Breznik project was the most significant project purchased from Thrace Resources and was reported by Euromax to have Joint Ore Reserves Committee (JORC)-compliant indicated resources of about 1 million metric tons (Mt) grading 2.01 grams per metric ton (g/t) gold and 6.05 g/t silver and inferred resources of 689,000 metric tons (t) grading 1.79 g/t gold and 5.66 g/t silver (Euromax Resources Ltd., 2010, p. 4, 8).

Besides working to expand its Chelopech project as discussed in the copper section above, Dundee also submitted an application to turn its Krumovgrad exploration concession into a mining concession. According to Dundee, the Krumovgrad deposit had NI 43-101-compliant proven and probable reserves of about 4.86 Mt of ore, with 5.08 g/t of gold. No date was given as to when mining could potentially begin, but the company hoped to have a more detailed assessment prepared in 2010. Cambridge Mineral Resources plc of the United Kingdom had two exploration projects in Bulgaria and reported a JORC-compliant indicated resource of 15.8 Mt of ore grading 0.85 g/t gold at its Tashlaka Hill project, and indicated resources based on the Russian system of resource classification of 6.74 Mt grading 2.11 g/t gold at its Chaira project (Cambridge Mineral Resources plc, 2010; Dundee Precious Metals Inc., 2010, p. 31-32)

Iron and Steel.—No ferroalloys or pig iron was produced in Bulgaria, and production of crude steel decreased significantly in 2009 because Kremikovtzi AD's production capacity was shut down in late 2008. Bulgaria's only other producer of crude steel, Stomana Industry S.A., reduced production owing to

the world financial crisis and the resulting reduction in steel demand. The Bulgarian Government continued to try to sell Kremikovtzi AD, which was declared insolvent in 2008, but in February, Smart Holding of Ukraine ended talks concerning the purchase of the plant and in March, Companhia Siderugica Nacional of Brazil withdrew its interest in purchasing the plant. Gas supplies to Kremikovtzi were stopped on May 15 owing to unpaid debts and signaled the end to any hope that the plant would restart production. By the end of the year, investors chose not to approve plans to restart the insolvent company and it seemed likely that the plant, which had previously employed about 5,000 people, would be liquidated in 2010. Promet Steel JSC was removed from the list of steel producers in table 2 because it is now believed that Promet was a producer only of steel products, not of crude steel (Ivanova and Zawadzki, 2009; Kostadinov, 2009b; Ledwith, ed., 2009; Sofia News Agency, 2009a, c).

Lead and Zinc.—Production of refined lead and zinc both decreased in 2009 as demand for metals declined owing to the world economic crisis. Lead and Zinc Complex Plc. (LZC) planned to release 150 employees in 2009. In October, LZC obtained a permit that would allow it to begin work on a modernization plan to increase zinc production capacity by 40% and enable it to meet EU environmental standards. The project was expected to be completed by 2012. In 2009, Bulgaria reduced its imports of lead content of ores and concentrates to 38,000 t from 72,000 t in 2008, and reduced its exports of refined lead to 76,000 t in 2009 from 80,000 t in 2008. Bulgaria imported 73,000 t of zinc content of ores and concentrates, which was the same amount as in 2008, and reduced exports of refined zinc to 87,000 t from 94,000 t in 2008 (Sofia News Agency, 2009b; International Lead and Zinc Study Group, 2010, p. 12-13, 44-45).

Industrial Minerals

Cement.—Cement production was estimated to have fallen significantly as cement consumption in Bulgaria decreased by 37% in 2009 compared with consumption in 2008 owing to the reduction of construction projects as a result of the world financial crisis. Because of the lack of demand for cement, Holcim Bulgaria AD (a subsidiary of Holcim Ltd. of Switzerland) temporarily stopped producing cement clinker at its cement plant at Pleven and instead used the plant to grind clinker produced by the plant at Beli Izvor. Italcementi Group of Italy planned to expand its cement production capacity at Devnya Cement to 2.7 Mt/yr from 2 Mt/yr but postponed work on the project for 1 year, presumably because of the lack of available financing owing to the world financial crisis. No estimated date for the completion of the project was given (Holcim Ltd., 2010, p. 56; Italcementi Group, 2010a, p. 50, 61; b).

Mineral Fuels and Related Materials

Coal.—Bulgaria's main producer of coal was Mini Maritsa Iztok EAD, which accounted for about 95% of lignite production in Bulgaria. Economic Mining and Power Combine (SMEK) Balkanbass was removed from the list of bituminous

coal producers in table 2. No information was available as to when SMEK Balkanbass stopped production of coal, but Mina Balkan 2000 AD is the only reported producer of bituminous coal (Ministry of Economy, Energy, and Tourism, 2009, p. 11).

Coke.—No coke was produced in 2009 because the production capacity of Kremikovtzi AD (the country's only coke producer) was shut down in late 2008.

Natural Gas.—On January 31, Melrose Resouces S.a.r.l. stopped production at its Galata field in the Black Sea, which had been the only source of natural gas production in Bulgaria. The field was almost depleted, and Melrose planned to convert it into a gas storage facility that would have an eventual capacity of 1.2 billion cubic meters and potentially up to 1.8 billion cubic meters. The company was waiting for various approvals from the Government before continuing work on the project. In 2008, the Galata field provided about 6.5% of the gas consumed in Bulgaria; the other 93.5% was imported from Russia. Melrose had been exploring two offshore fields in the Black Sea and reported reserves of 1.4 billion cubic meters at the Kaliakra deposit and 0.7 billion cubic meters at the Kavarna deposit; it planned to begin producing about 1.3 million cubic meters per day from these two deposits in 2010 (Ministry of Economy, Energy, and Tourism, 2009, p. 6; Melrose Resources Plc., 2010, p. 14-16).

Bulgaria imported 3.43 billion cubic meters of natural gas in 2008 and 2.52 billion cubic meters in 2009. The reduced imports of gas were the result of reduced industrial use of gas and the January gas crisis, which started when Russia shut off supplies of gas to Ukraine because of payment disputes. Gas deliveries to Bulgaria were completely stopped from January 6 to January 20 during the gas crisis and cost Bulgaria about 180 million cubic meters of gas imports. The larger reason for reduced gas imports was most likely decreased industrial activity as production slowed owing to the world economic crisis (Kosturkov, 2009; National Statistical Institute of the Republic of Bulgaria, 2010c).

In May, Bulgarian Energy Holding EAD and OAO Gazprom of Russia signed an agreement that established the framework for a feasibility study of the South Stream natural gas pipeline's section through Bulgaria and the establishment of a joint venture to build and operate the pipeline. Following elections in July, a new center-right government took power in Bulgaria and announced that it wanted to reexamine energy deals made with Russia by the former Socialist Party-led government. In December, the Bulgarian Energy Ministry and Bulgaria Energy Holding EAD agreed to hold talks in January 2010 with Gazprom to discuss reestablishing terms for the continuation of the South Stream project in Bulgaria. The South Stream pipeline had a planned capacity of 63 billion cubic meters per year of natural gas to be transported from Russia to Europe through the Black Sea (Leviev-Sawyer, 2009; OAO Gazprom, 2009, 2010).

On July 13, Bulgaria, along with Austria, Hungary, Romania, and Turkey, signed an agreement that established the basic legal rules and tariff regulations for the Nabucco natural gas pipeline project. Nabucco was supported by the European Union and the United States and was designed to act as an alternative supply route for natural gas to Europe by transporting 31 billion cubic meters per year of gas from Central Asia and the Middle East. Supplies of natural gas for the pipeline were the biggest concern

for the project because no source of gas had been guaranteed (Offshore, 2009).

Uranium.—No uranium was mined in Bulgaria and all the nuclear fuel required for the country's only nuclear powerplant (NPP) at Kozloduy was imported from TVEL Corp. of Russia. In October, RWE Power AG (RWE) of Germany announced that it would withdraw its participation in the construction of the 2,000-megawatt Belene NPP because it could not obtain a source of financing to cover its obligations. RWE also said that the project's failure to meet schedule targets to sign a construction contract and to establish a financial framework had also affected its decision. In December 2008, RWE and Bulgaria's Natsionalna Elektricheska Kompania (NEK) EAD had signed an agreement to give RWE a 49% stake in the Belene NPP; NEK would hold the remaining 51%. After the withdrawal of RWE from the project, NEK said that it would hire a consultant to develop new financing and development plans for the project, and NEK would potentially reduce its percentage of shares in the project to attract new investors. Critics claimed that the project could exceed planned costs and possibly cost up to 10 billion euros (TVEL Corp., 2006; Bulgarian Energy Holding EAD, 2009; Ivanova, 2009; Kostadinov, 2009a).

Outlook

The world economic crisis had a severe negative effect on Bulgaria's economy and mineral production. Improvements in the economic situation in Europe and renewed construction activity in Bulgaria could lead to increased production of mineral commodities in Bulgaria, but the country was expected to remain a modest producer in terms of world production.

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 $\label{eq:table 1} \textbf{TABLE 1}$ <code>BULGARIA: PRODUCTION OF MINERAL COMMODITIES^1</code>

(Metric tons unless otherwise specified)

Albamium, metal, secondary 12,607 12,825 17,330 12,607 12 12 13 14,007 12 12 13 14,007 12 12 13 14,007 12 12 13 14,007 12 12 13 14 16 109 10 10 10 10 10 10 1	Commodity ²		2005	2006	2007	2008	2009
Cadminum, metal, smeller	METALS		<u> </u>			<u> </u>	
Copper Ore	Aluminum, metal, secondary		5,107	12,825	17,330	12,607 ^r	12,000 e
Ories Gioss weight thousand metric tors 24,807 29,572 29,674 27,826 27, 27,826 27, 28,26 28,28 28,26 28,28 28,26 28,28 28,26 27, 28,26 27, 28,26 27, 28,26 28,28 28,26 27,28 28,26 27,28 28,26 27,28 28,26 27,28 28,26 27,28 28,26 27,28 28,26 28,28 28,20 29,100 28,20 29,200 28,20 29,100 28,20 29,100 28,22 29,00 18,20 19,20 18,20 18,20 19,20 18,20 19,20 18,20	Cadmium, metal, smelter		350	363	459	460 ^e	420 ^e
Gross weight	Copper:						
Cuententric	Ore:						
Concentrate: Gross weight	Gross weight	thousand metric tons	24,807	29,572	29,674	27,826	27,800 ^e
Gross weight	Cu content ^e	do.	112	124	116	109	110 e
Metal, primary and secondary:	Concentrate:						
Metal_primary and secondary:	Gross weight	do.	470	502	502	428	430 ^e
Smelter	Cu content	do.	95	110	110	105	105
Refined_electrolytically	Metal, primary and secondary:						
Gold, in concentrate Kilograms 3,868 3,818 3,964 4,160 4,160 4,160 100	Smelter		240,000	238,500	229,100	278,200 ^r	276,200
Final modes Final steek, metal: Fig iron for steekmaking thousand metric tons 1,081 1,147 1,069 441 5 1,081 1,147 1,069 441 5 1,081 1,147 1,069 1,330 1,081 1,482 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,452 1,400 1,400 1,287 1,330 1,200 1,452 1,400 1,400 1,287 1,330 1,400 1,400 1,287 1,330 1,400 1,	Refined, electrolytically		60,500	65,500	69,900	126,700	196,900
Pig iron for steelmaking	Gold, in concentrate	kilograms	3,868	3,818	3,964	4,160	4,300 e
Ferroalloys	Iron and steel, metal:						
Steel, crude		thousand metric tons	1,081	1,147	1,069		
Semimanufactures	Ferroalloys ^e	do.	10	10	10	6 ^{r, 3}	
Lead: Mine output, Pb content 13,000 10,000 15,000 15,000 18,		do.	1,969	2,124	1,909	1,330	726
Mine output, Pb content 13,000 10,000 15,000 15,000 18,	Semimanufactures ^e	do.	1,452 3	1,400	1,400	1,287 r, 3	700
Concentrate: 31,500 25,387 23,395 18,503 19 Pb content 22,050 17,771 16,377 12,950 13 Metal, refined, primary and secondary 80,824 76,028 86,956 90,878 83 Manganese ore: 39,000 20,000 28,000 39,000 39 Mn contente	Lead:						
Gross weight 31,500 25,387 23,395 18,503 19 Pb content 22,050 17,771 16,377 12,950 13 Metal, refined, primary and secondary 80,824 76,028 86,956 90,878 83 Manganese ore:	Mine output, Pb content		13,000	10,000	15,000	15,000	18,000
Pb content	Concentrate:						
Metal, refined, primary and secondary 80,824 76,028 86,956 90,878 83 Manganese ore:	Gross weight		31,500	25,387	23,395	18,503	19,000 ^e
Manganese ore: 39,000 20,000 28,000 39,000 39 39 Mn contents 10,000 5,600 7,840 10,900 10 5,600 55,000 10,000 10,000 12,000 10,	Pb content		22,050	17,771	16,377	12,950	13,000 ^e
Gross weight Mcontent ^c 39,000 20,000 28,000 39,000 39, 39,00 39,000 39,000 39,000 39,000 39,000 39,000 39,000 39,000 10,900 10 10 10,900 55,000 50,000 40,000 10,000	Metal, refined, primary and secondary		80,824	76,028	86,956	90,878 ^r	83,000
Mn content ^c kilograms 5,600 7,840 10,900 10 Silver, metal* kilograms 55,000 65,000 55,000 55,000 55 Tin, metal, secondary* 10 10 2 2 Zinc: 11,000 8,000 10,000 10,000 12 Concentrate: 33,700 25,917 23,474 20,343 20 Zn content** 17,500 13,500 12,200 10,600 10 Metal, refined, primary and secondary INDUSTRIAL MINERALS 95,077 95,341 99,992 106,453 ** 92 Barite ore, run-of-mine* 76,600 74,500 50,900 40,000 14 Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ** 3 Clays: Bentonite do. 181 134 99 178 Refractory* do. 1,381 1,658 1,631 1,530 1, Feldspar* do. 22 3 18 3	Manganese ore:						
Silver, metal Concentrate Silver, metal Silver, metal Silver, metal Silver, metal Silver, metal Silver, metal	Gross weight		39,000	20,000	28,000	39,000	39,000 ^e
Tin, metal, secondary ^c 10 10 2 2 Zinc: Mine output, Zn content 11,000 8,000 10,000 10,000 12 Gross weight 33,700 25,917 23,474 20,343 20 Zn content ^c 17,500 13,500 12,200 10,600 10 Metal, refined, primary and secondary 95,077 95,341 99,992 106,453 ^r 92 INDUSTRIAL MINERALS 76,600 74,500 50,900 40,000 14 Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ^r 3 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Feldspare do. 22 ³ 18 ³ 15 15 Feldspare do. 73 ³ 93 ³ 90 ^r 90 Fluorspare do. 188 216 234	Mn content ^e		10,900	5,600	7,840	10,900	10,900
Tin, metal, secondary ^c 10 10 2 2 Zinc: Mine output, Zn content 11,000 8,000 10,000 10,000 12 Gross weight 33,700 25,917 23,474 20,343 20 Zn content ^c 17,500 13,500 12,200 10,600 10 Metal, refined, primary and secondary 95,077 95,341 99,992 106,453 ^r 92 Indicatory NDUSTRIAL MINERALS 76,600 74,500 50,900 40,000 14 Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ^r 3 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Feldspare do. 22 ³ 18 ³ 15 15 Feldspare do. 73 ³ 93 ³ 90 ^r 90 Fluorspare do. 188 216	Silver, metal ^e	kilograms	55,000		55,000	55,000	55,000
Mine output, Zn content 11,000 8,000 10,000 10,000 12 Concentrate: 33,700 25,917 23,474 20,343 20 Zn content [©] 17,500 13,500 12,200 10,600 10 Metal, refined, primary and secondary 95,077 95,341 99,992 106,453 ^r 92 INDUSTRIAL MINERALS Barite ore, run-of-mine [©] 76,600 74,500 50,900 40,000 14 Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ^r 3 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Refractory [©] do. 22 ³ 18 ³ 15 15 15 Feldspar [©] do. 23 ³ 93 ³ 90 ^r 90 90 10 10 10 10 10 10 10 10 10	Tin, metal, secondary ^e					2	1
Concentrate: Gross weight 33,700 25,917 23,474 20,343 20, 20 Zn content* 17,500 13,500 12,200 10,600 10,600 Metal, refined, primary and secondary 95,077 95,341 99,992 106,453 * 92,000 INDUSTRIAL MINERALS Barite ore, run-of-mine* 76,600 74,500 50,900 40,000 14,000 Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 * 3,618 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1,530 Refractory* do. 22 3 18 3 15 15 Feldspar* do. 23 3 18 3 15 15 Feldspar** do. 2 2 2 2 2 Gypsum and anhydrite: 20 2 2 2 2 Crude do. <t< td=""><td>Zinc:</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Zinc:						
Gross weight 33,700 25,917 23,474 20,343 20 Zn content ^c 17,500 13,500 12,200 10,600 10 Metal, refined, primary and secondary 95,077 95,341 99,992 106,453 ^r 92 INDUSTRIAL MINERALS Barite ore, run-of-mine ^c 76,600 74,500 50,900 40,000 14 Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ^r 3 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Refractory ^c do. 22 ³ 18 ³ 15 15 Feldspar ^c do. 73 ³ 93 ³ 90 ^r 90 Fluorspar ^c do. 22 ² 2 2 2 Gypsum and anhydrite: 20 22 ² 2 2 2 Calcined ^c do. 1,352 <td>Mine output, Zn content</td> <td></td> <td>11,000</td> <td>8,000</td> <td>10,000</td> <td>10,000</td> <td>12,000</td>	Mine output, Zn content		11,000	8,000	10,000	10,000	12,000
Tr. contente	Concentrate:						
Metal, refined, primary and secondary 1NDUSTRIAL MINERALS 106,453 1	Gross weight		33,700	25,917	23,474	20,343	20,500 e
Metal, refined, primary and secondary 95,077 95,341 99,992 106,453 92			17,500	13,500	12,200	10,600	10,700
NDUSTRIAL MINERALS Barite ore, run-of-mine ^c 76,600 74,500 50,900 40,000 14,	Metal, refined, primary and secondary						92,000
Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ° 3 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Refractory° do. 22 ³ 18 ³ 15 15 Feldspar° do. 73 ³ 93 ³ 90 ° 90 Fluorspar° do. 2 2 2 2 Gypsum and anhydrite: Crude do. 188 216 234 210 ° Calcined° do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 ° 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 ° 3 Nitrogen, N content of ammonia° do. 15 5 14 7 Perlite do. 150 150 150 150		ALS					
Cement, hydraulic thousand metric tons 3,618 4,093 4,413 4,903 ° 3 Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Refractory° do. 22 ³ 18 ³ 15 15 Feldspar° do. 73 ³ 93 ³ 90 ° 90 Fluorspar° do. 2 2 2 2 Gypsum and anhydrite: Crude do. 188 216 234 210 ° Calcined° do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 ° 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 ° 3 Nitrogen, N content of ammonia° do. 15 5 14 7 Perlite do. 150 150 150 150	Barite ore, run-of-mine ^e		76,600	74,500	50,900	40,000	14,300
Clays: Bentonite do. 181 134 99 178 Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Refractoryc do. 22 3 18 3 15 15 Feldsparc do. 73 3 93 3 90 r 90 Fluorsparc do. 2 2 2 2 2 Gypsum and anhydrite: Crude do. 188 216 234 210 r Calcinede do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 r 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 e 3 Nitrogen, N content of ammoniace do. 15 5 14 7 Perlite do. 150 150 150 150		thousand metric tons				4,903 ^r	3,000 e
Bentonite do. 181 134 99 178			,	,	,	,	,
Kaolin, raw do. 1,381 1,658 1,631 1,530 1 Refractoryc do. 22 3 18 3 15 15 Feldsparc do. 73 3 93 3 90 r 90 Fluorsparc do. 2 2 2 2 2 Gypsum and anhydrite: Crude do. 188 216 234 210 r 2 1 2 2 2 2		do.	181	134	99	178	160 ^e
Refractory ^c do. 22 ³ 18 ³ 15 15 Feldspar ^c do. 73 ³ 93 ³ 90 ^r 90 Fluorspar ^c do. 2 2 2 2 2 2 2 Gypsum and anhydrite: Crude do. 188 216 234 210 ^r Calcined ^c do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 ^r 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 ^c 3 Nitrogen, N content of ammonia ^c do. 15 5 14 7 Perlite do. 150 150 150 150					1.631		1,400 e
Feldspare do. 73 ³ 3 93 ³ 90 ° 90 Fluorspare do. 2 2 2 2 2 2 2 2 Gypsum and anhydrite: Crude do. 188 216 234 210 ° 234 210 ° Calcinede do. 65 75 75 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 ° 1,422 ° 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 ° 3,340 ° 3 Nitrogen, N content of ammoniae do. 395 309 350 350 ° 350 ° Perlite do. 15 5 14 7 7 Pyrites, gross weighte do. 150 150 150 150							15
Fluorspare do. 2 2 2 2 2 Gypsum and anhydrite: do. 188 216 234 210 ° Cude do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 ° 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 ° 3 Nitrogen, N content of ammoniae do. 395 309 350 350 ° Perlite do. 15 5 14 7 Pyrites, gross weighte do. 150 150 150							80
Gypsum and anhydrite: Crude do. 188 216 234 210 r Calcinede do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 r 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 e° 3 Nitrogen, N content of ammoniae do. 395 309 350 350 e° Perlite do. 15 5 14 7 Pyrites, gross weighte do. 150 150 150							2
Crude do. 188 216 234 210 r Calcinede do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 r 1. Limestone and dolomite do. 3,265 3,340 3,335 3,340 e 3. Nitrogen, N content of ammoniae do. 395 309 350 350 e Perlite do. 15 5 14 7 Pyrites, gross weighte do. 150 150 150			2	2	2	2	2
Calcinede do. 65 75 75 75 Lime, industrial do. 1,352 1,409 1,443 1,422 r 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 e 3 Nitrogen, N content of ammoniae do. 395 309 350 350 e Perlite do. 15 5 14 7 Pyrites, gross weighte do. 150 150 150		do	199	216	234	210 ^r	190 ^e
Lime, industrial do. 1,352 1,409 1,443 1,422 r 1 Limestone and dolomite do. 3,265 3,340 3,335 3,340 e 3 Nitrogen, N content of ammoniae do. 395 309 350 350 e Perlite do. 15 5 14 7 Pyrites, gross weighte do. 150 150 150							70
Limestone and dolomite do. 3,265 3,340 3,335 3,340 ° 3, 3,840 ° 3							1,300 ^e
Nitrogen, N content of ammonia ^e do. 395 309 350 350 e Perlite do. 15 5 14 7 Pyrites, gross weight ^e do. 150 150 150 150				· ·			
Perlite do. 15 5 14 7 Pyrites, gross weight ^e do. 150 150 150 150							3,100 e
Pyrites, gross weight ^e do. 150 150 150							320 ^e
							7 e
Colt all trace 1 000 2000 2000 1							150
Salt, all types do. 1,900 2,000 2,000 2,100 1. See footnotes at end of table	Salt, all types	do.	1,900	2,000	2,000	2,100	1,900 e

See footnotes at end of table.

TABLE 1—Continued BULGARIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²		2005	2006	2007	2008	2009
INDUSTRIAL MINE	ERALS—Continued					
Sand and gravel:						
As reported	thousand cubic meters	3,628	4,293	4,925	5,517	5,000 ^e
Converted ^e	thousand metric tons	5,800	6,900	7,900	8,800	8,000 ^e
Silica, quartz sand	do.	583	250	551	734	650 ^e
Sodium carbonate, calcined ^e	do.	800	800	800	800	800 ^e
Sulfur:e		1				
S content of pyrites		25,000	25,000	25,000	25,000	25,000
Byproduct		300,000	300,000	300,000	300,000	300,000
Total		325,000	325,000	325,000	325,000	325,000
Sulfuric acid ^e		$1,020,000^{-3}$	$1,009,500^{-3}$	1,010,000	1,010,000	1,000,000
Zeolite ^e		15,000	15,000	15,000	15,000	15,000
MINERAL FUELS AND F	RELATED MATERIALS					
Coal, marketable:						
Bituminous	thousand metric tons	96	52	18	19	18 ^e
Brown	do.	2,620	2,557	2,834	2,643	2,500 ^e
Lignite	do.	22,193	22,750	25,325	26,008	24,700 ^e
Total	do.	24,909	25,359	28,177	28,670	27,218
Coke	do.	752 ^r	668 ^r	525 ^r	337 ^r	
Natural gas, marketed	million cubic meters	537	519	295	218	12
Petroleum: ⁴						
Crude	thousand 42-gallon barrels	198	183	176	169	176
Refinery products ^e	do.	47,800 ^r	54,600 ^r	54,400 ^r	54,500 ^r	50,000

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. -- Zero.

 ${\bf TABLE~2} \\ {\bf BULGARIA:~STRUCTURE~OF~THE~MINERAL~INDUSTRY~IN~2009}$

(Thousand metric tons unless otherwise specified)

	Major operating companies		Annual	
Commodity	and major equity owners	Location of main facilities	capacity	
Bentonite, mine output	Bentonit AD (S&B Industrial	Kardzhali	NA.	
	Minerals AD)			
Cadmium	KCM S.A.	Plovdiv	300.	
	Lead and Zinc Complex Plc. (LZC)	Kardzhali	150.e	
	(Intertrust Holding, 90%)			
Cement	Devnya Cement (Italcementi Group)	Devnya	2,000.	
Do.	Vulkan Cement (Italcementi Group)	Dimitrovgrad	500.	
Do.	Holcim Bulgaria AD (Holcim Ltd.)	Pleven Plant and Beli Izvor Plant	2,400.	
Do.	Titan Zlatna Panega	Zlatna Panega	1,500.	
Coal:				
Bituminous	Mina Balkan 2000 EAD	Central Bulgaria	NA.	
Brown	Otkrit Vagledobiv Mines EAD	Pernik coal basin, southwest of Sofia	2,000.e	
Do.	Vagledobiv Bobov Dol EOOD	Bobov Dol coalfield	1,000. ^e	
Do.	Other small producers	Eastern and western Bulgaria	1,000. ^e	
Lignite	Mini Maritsa Iztok EAD (State owned)	East Maritsa coal basin near Radnevo	25,000.e	
Do.	Other small producers	Sofia, Pernik, and Bobov Dol coal basins	5,000.e	
C . C 1 . C . 1 1				

See footnotes at end of table.

¹Table includes data available through August 25, 2010.

²In addition to the commodities listed, bismuth, chromite, magnesite, palladium, platinum, tellurium, and a variety of crude construction materials (common clays, dimension stone, and crushed stone) may be produced, but available information is inadequate to make reliable estimates of output.

³Reported figure.

⁴Figures were converted to barrels from production reported in thousand metric tons, which was reported as the following: Crude production: 2005—27; 2006—25; 2007—24; 2008—23; 2009—24. Petroleum products: 2005—5,971; 2006—6,829; 2007—6,806; 2008—6,812; and 2009—6,255.

$\label{thm:continued} \mbox{BULGARIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2009}$

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity	
Coke		Kremikovtzi A.D.	About 10 kilometers northeast of Sofia	NA.	
Copper:					
Concentrate, Cu content		Assarel-Medet JSC	Panagurishte, Pazardzhik District	57.	
Do.		Ellatzite-Med AD	Mine 8 kilometers south of Etropole, concentrator near Mirkovo village	45.	
Do.		Dundee Precious Metals Inc.	Chelopech	13.	
Do.		Bradtze	Malko Turnovo	2.	
Do.		Burgaskii Mines Ltd., Zidorovo	Burgas, near the Black Sea	1.	
Metal:					
Smelter		Aurubis Bulgaria AD (Aurubis AG)	Pirdop	275.	
Refinery		do.	do.	200.	
Gold, in concentrate	kilograms	Dundee Precious Metals Inc.	Chelopech	2,500.e	
Do.	do.	Ellatzite-Med AD	Mine 8 kilometers south of Etropole and concentrator near Mirkovo village	NA.	
Iron ore		Kremikovtzi A.D.	About 10 kilometers northeast of Sofia	NA.	
Kaolin, mine output		Kaolin AD	Senovo, Rousse District	NA.	
Lead-zinc:			•		
Concentrate, Pb-Zn content		Gorubso Co. (Intertrust Holding)	Erma Reka, Kardzhali, Laki and Zlatograd, all in Madan area near Greek border	59 lead, 47 zinc	
Do.		Osogovo Ltd.	Osogovo Mountains, western Bulgaria	3 lead, 2 zinc	
Do.		Rudmetal JSC	Dimov Dol Mine, near Rudozem	3 lead, 2 zinc	
Metal:					
Pb, refined		KCM S.A.	Plovdiv	65.	
Do.		Lead and Zinc Complex Plc. (LZC) (Intertrust Holding, 90%)	Kardzhali	33.	
Zn, smelter		KCM S.A.	Plovdiv	75.	
Do.		Lead and Zinc Complex Plc. (LZC) (Intertrust Holding, 90%)	Kardzhali	28.	
Manganese ore		Obrochishte Mine (Euromangan AD)	Tsarkva village, 10 kilometers west of Balchik	NA.	
Natural gas	million cubic meters	Melrose Resources S.a r.l. (100%, Melrose Resources Plc.)	Galata field, in the Black Sea off the coast of Varna	NA.	
Do.	do.	Oil and Gas Exploration and Production Plc.	Gas field concessions near Dolni Dubnik, Selanovtzi, and others	NA.	
Perlite, mine output		Bentonit AD (S&B Industrial Minerals AD)	Kardzali	NA.	
Petroleum:		· · · · · · · · · · · · · · · · · · ·		-	
Crude		Oil and Gas Exploration and Production Plc.	Tyulenovo, Dolni Dubnik, Dolni Lukovit, Gorni Dubnik, and other oil fields	NA.	
Refined 42-gallon barrels per day		Lukoil Neftochim Bourgas AD	Refinery at Burgas	215,000.	
Silver:	F7				
In concentrate	kilograms	Dundee Precious Metals Inc.	Chelopech	3,200.e	
Metal		KCM S.A.	Plovdiv	100.	
Steel, crude		Kremikovtzi A.D.	About 10 kilometers northeast of Sofia	NA.	
Do.		Stomana Industry S.A. (Sidenor S.A., 100%)	Pernik	1,400.	
		100%)			

Do., do. Ditto. ^eEstimated. NA Not available.